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PAN-CINOR

35 mm & TELEVISION

Granted the technical medal of the Academy of Motion Picture Arts and Sciences in Hollywood, adopted by manufacturers and cameramen all over the world, the PAN CINOR variable focal length lens for television and motion picture photography needs no further introduction.

We have thought it useful to put together in one booklet all general information for current or future users of these lenses. This information is grouped according to their application, though their use is extremely flexible, and often limited only by the imagination of the user.



The qualities that all these lenses have in common can briefly be summarized as follows:

- 1) Reliable in use due to the precision machining and resistance of the material, made possible by the particularly simple and original conception of this optical formula.
- 2) Constant brightness and negligible variation in the distance setting while zooming.
- 3) Excellent image sharpness at all focal lengths even at maximum diaphragm opening producing the best possible image in television or on black & white or color films. This high definition has never been attained until now.
- 4) A reflex viewfinder of very high liminosity is optional.

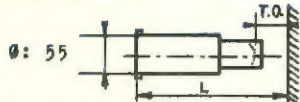

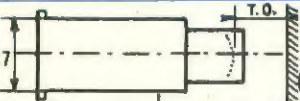
The PAN CINOR 4 system includes a solution to your problem, and it is undoubtedly the easiest and safest solution. The following list covers the types destined principally for television (Vidicon, Iconoscope, or image Orthicon tubes) and for 35 mm filming.

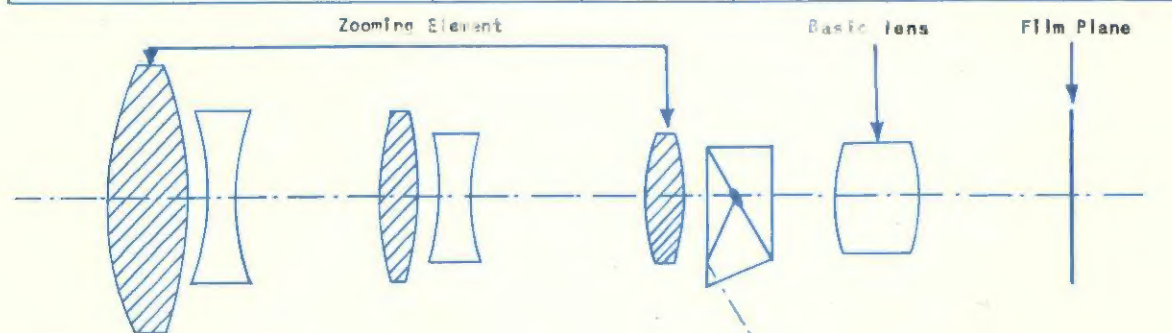
A2	f	25- to 100 mm	f/3,4	(T/4,5)
B2	f	-	2,4	(T/3,2)
B3	f	38,5 to 154 mm	3,8	(T/4,7)
C3	f	-	2,4	(T/3,2)
B3 Bis	f	40 to 170 mm	4,2	(long backfocus)
B4	f	60 to 240 mm	5,9	
C4	f	-	3,8	(T/4,7)

The Synoptic table (further on) summarizes the possibilities of each model, the appropriate mountings permitting you to mount these lenses on the majority of present day cameras, or remote controls permitting distance operation of all or a part of the adjustments of the PAN CINOR.

MAIN FEATURES of PAN CINOR "4"

SOM BERTHIOT

BASIC LENSES						
RANGE of FOCAL LENGTHS DIAGONAL COVERED	17,5-70 12,3	25-100 17	38,5-154 27	40-170 16	60-240 41,5	
ZOOMING ELEMENT	<div><p>SMALL $\emptyset: 55$ $2 \frac{6}{8}$ lbs</p></div>	<div><p>1</p><p>(A1) f: 2,4 L = 166</p></div>	<div><p>2</p><p>(A2) f: 3,4 T / 4,7 L = 189</p></div>	3	3 bis	4
	<div><p>MEDIUM $\emptyset: 74$ $5 \frac{3}{8}$ lbs</p></div>		<div><p>(B2) f: 2,4 T / 3,2 L = 232</p></div>	<div><p>(B3) f: 3,8 T / 4,7 L = 279</p></div>	<div><p>(B3) bis f: 4,2 L = 372</p></div>	<div><p>(B4) f: 5,9 L = 351</p></div>
	<div><p>BIG $\emptyset: 117$ $17 \frac{5}{8}$ lbs</p></div>			<div><p>(C3) f: 2,4 T / 3,2 L = 365</p></div>		<div><p>(C4) f: 3,8 T / 4,7 L = 437</p></div>
BACK FOCUS (T0)	29,41	41,17	64,7	149,6	100,8	
USES	16 mm	TV STATICON VIDICON RESISTRON 16 mm	35 mm TV VIDICON	VIDICON 16 mm	TV IMAGE ORTHICON VISTAVISION 35 mm TV VIDICON	

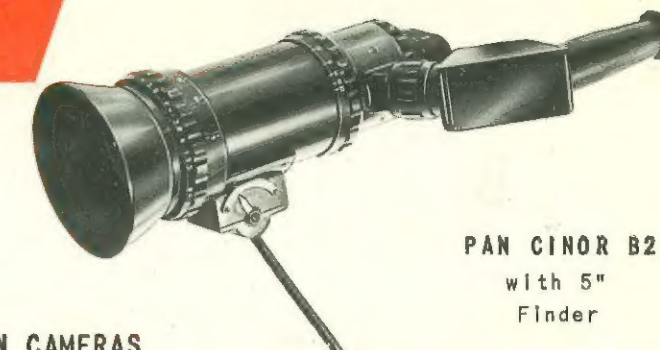
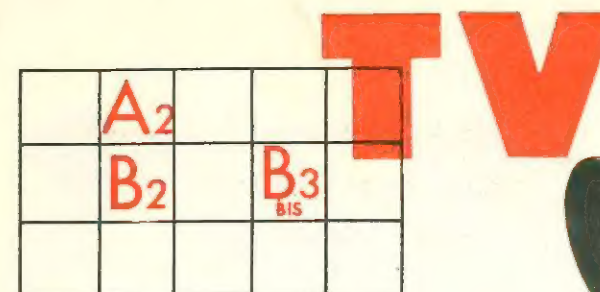


Optical plan
of PAN CINOR 4.

GENERAL INFORMATION

- 1) There are 3 types (A-B-C) and 5 basic Pan Cinor lenses (1-2-3-3 bis -4) which result in the combinations described below.
- 2) The different mounts for the different cameras are not interchangeable.
- 3) Reflex finder: type A lenses have a finder with a length of 5", type B is available either with 5" or 15½" finder. Type C has no finder at all. Installing a finder on a Pan-Cinor originally supplied without finder requires returning the lens to the factory.

All dimensions in mm



USES

NORMAL USE : VIDICON TELEVISION CAMERAS

The PAN CINOR A2-B2-B3 bis are especially designed for Vidicon television tubes or other television tubes of the same size. Model A2 is the special low priced model; type B2 has a large aperture allowing pictures in poor lighting (meteorology; observation in the open air). Indoors, the use of this lens offers great economy in the lighting. The B3 bis offers a long backfocus which is necessary in certain cases (multiple pictures, color television).

OTHER USES :

For 16 mm filming in black and white or color with excellent picture definition.

OTHER LENSES FOR USE ON VIDICON CAMERAS :

All B3-C3-B4 and C4 PAN CINOR lenses can be used on Vidicon cameras as telephoto lenses of variable power.

Specifications

Minimum focal length
Maximum focal length
Maximum aperture F and T (remains constant)
Normal area covered
Maximum diagonal covered
Distance range - without close-up lens
 - with 6' close-up lens
 - with 3' close-up lens

Backfocus (distance from rear lens
to image plane)
Total length (from image plane to front of lens)
Front diameter (for mounting sunshade)
Size of drop-in filter:
Weight without finder
 with 5" finder
 with 15½" finder

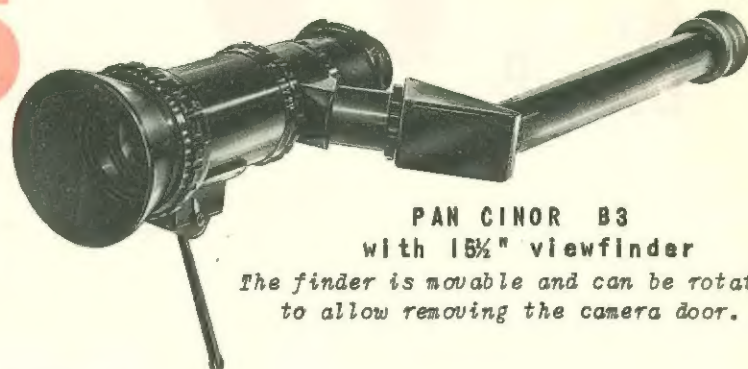
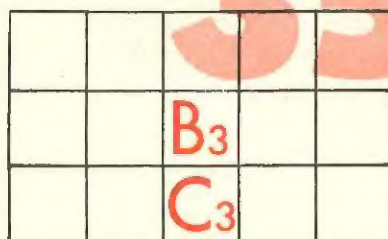
Mounts

There are many possibilities for adapting the lens to various cameras. The chart opposite lists some of the mounts currently available. Consult us for special versions indicating make and type of camera. A "neutral" mount is considered for each model.

NEUTRAL MOUNT:

f = Female Thread - m = Male Thread.

A ₂	B ₂	B ₃ BIS
25	25	40
100	100	170
f/3.4 T/4.7	f/2.4 T/32	f/4
9×12mm	9×12mm	9×12mm
17,5mm	17,5mm	20mm
∞ à 2m	∞ à 2m	∞ à 2m
2 à 1,10m	2 à 1,13m	2m10 à 1m13
1,10 à 0,80m	1,13 à 0,84m	1m13 à 0m84
41,17mm	41,17mm	149,6mm
189mm	232mm	372mm
∅ 66 (75)	∅ 78 (75)	∅ 78 (75)
63,65mm	75mm	75 mm
2 3/16 lbs	3 5/8 lbs	4 lbs
2 6/8 lbs	4 6/8 lbs	
3 6/8 lbs	5 6/8 lbs	
	available	available
	available	available
	available	available
	available	available
	available	
	available	
	available	
	available	
	available	
	∅ 48,5(0,75)(f)	∅ 50(0,75)(m)
	29 mm	141 mm



PAN CINOR B3
with 15 1/2" viewfinder
The finder is movable and can be rotated
to allow removing the camera door.

USES

NORMAL USE FOR 35mm CINEMATOGRAPHY

The PAN CINOR B3, made especially for professional 35mm Cinematography, has met with great success and has been awarded the plaque for technical achievement by the Academy of Motion Picture Arts & Sciences. Motion picture photographers are well aware of its possibilities. The model C 3, made for the same film size, has a greater aperture which is often necessary in the studio especially for color photography. Close-up lenses permit the use of these lenses at close distances.

OTHER APPLICATIONS: 16mm filming and Vidicon television.

OTHER LENSES FOR 35 mm MOTION PICTURE CAMERAS

The PAN CINOR B4 and C4 can be used for 35mm filming as telelenses of variable power.

Specifications

Minimum focal length
Maximum focal length
Maximum aperture F and T (remains constant)
Normal area covered:
Maximum diagonal covered
Distance range - without close-up lens
- with 21' close-up lens
- with 13 1/2' close-up lens
- with 6' close-up lens
- with 3' close-up lens
Backfocus (distance from rear lens to image plane)
Total length (from image plane to front of lens)
Front diameter (for mounting sunshade)
Size of drop-in filter
Weight without finder
with 5" finder
with 15 1/2" finder

N.B. There is no finder for PAN CINOR Type C
PAN CINOR B4 and C4 without finder.

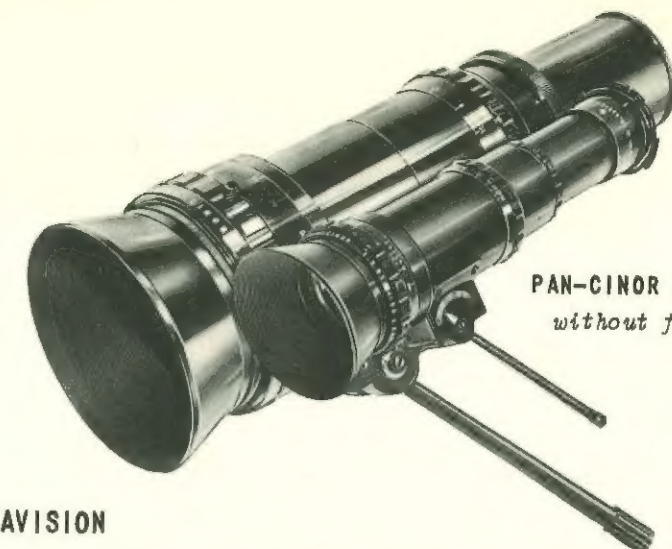
Mounts

There are many possibilities for adapting the lens to various cameras. The chart opposite lists some of the mounts currently available. Consult us for special versions indicating make and type of camera. A "neutral" mount is considered for each model.

I = Non-Threaded - f = Female Thread.

ARRIFLEX
CAMEFLEX
DEBRIE std.
DEBRIE "4-notch"
MITCHELL
(N C & B N C)
STANDARD "C"
NEUTRAL MOUNT:
- Ø & pitch
- Flange focal distance

B3	C3
38,5 mm	38,5 mm
154 mm	154 mm
f/3,8-T/4,7	f/2,4-T/3,2
16,5x22mm	16,5x22mm
27 mm	27 mm
∞ à 2,07m	∞ à 4,50m
2,07 à 1,20m	7,33 à 3,06m
1,20 à 0,91m	4,82 à 2,56m
64,7 mm	64,7 mm
279 mm	365 mm
Ø 78mm (0,75)	Ø 128mm (0,75)
75 mm	113 mm
4 1/2 lbs	15 6/8 lbs
5 5/16 lbs	
6 2/8 lbs	
available	available
available	available
available	available
available	available
available	available
available	available
Ø 55 (1)	Ø 75(1,00)(f)
68,85mm	28 mm



PAN-CINOR B4 & C4
without finder

USES

NORMAL USE: ORTHICON TELEVISION: VISTAVISION

The models B4 and C4 have been designed specially for the image orthicon tube. The B4 is frequently preferred because of the light weight. The aperture is usually large enough for the sensitivity of the orthicon tube. The C4, on the other hand is considerably faster.

OTHER USES:

35mm filming, standard size and Vistavision, 16mm and Vidicon television as a telephoto lens of great power, for example to record rapid movements at great distances (behaviour of missiles).

Specifications

Minimum focal length
Maximum focal length
Maximum aperture F and T (remains constant)
Normal area covered:
Maximum diagonal covered
Distance range - without close-up lens
- with 21' close-up lens
- with 13 1/2' close-up lens
- with 6' close-up lens
- with 3' close-up lens
Backfocus (distance from rear lens to image plane)
Total length (from image plane to front of lens)
Front diameter (for mounting sunshade)
Size of drop-in filter
Weight without finder
with 5" finder
with 15 1/2" finder

Mounts

There are many possibilities for adapting the lens to various cameras. The chart opposite lists some of the mounts currently available. Consult us for special versions indicating make and type of camera. A "neutral" mount is considered for each model.

RCA (Image Orthicon)

ARRIFLEX
CAMEFLEX
DEBRIE std.
"4-notch"
MITCHELL (NC et BNC)
STANDARD "C"

NEUTRAL MOUNT:
- Ø & pitch
- Flange focal distance

B4	C4
60	60
240	240
f/5,9	f/3,8-T/4,7
24x36 mm2	24x36 mm2
41,5 mm	41,5 mm
∞ à 2,11 m	∞ à 4,50 m
2,11 à 1,24 m	7,33 à 3,06 m
1,24 à 0,95 m	4,82 à 2,56 m
100,8 mm	100,8 mm
351 mm	437 mm
Ø 78mm (0,75)	Ø 128mm (0,75)
75 mm	113 mm
5 6/8 lbs	17 2/8 lbs
6 5/8 lbs	
7 5/8 lbs	
available	available
available	available
available	available
available	available
available	available
available	available
available	available
Ø 54(0,75)(f)	Ø 75(1,00)(f)
90 mm	70 mm

f = Female Thread.

REMOTE CONTROL of PAN-CINOR lenses

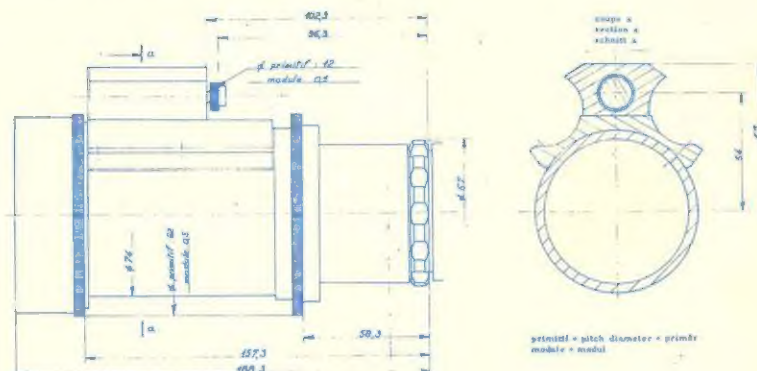


The applications of the PAN CINORS are extended by a remote control of some or all three controls; focal length, focusing, and f openings.

The PAN CINORS type B (B2, B3, B3 bis, B4) can be supplied in a special mount to take the remote control. Already designed and available shortly is a complete variable speed mechanism for the focal length and the focusing. Finally, a one speed on and off remote control is being made for all three adjustments or for the focal length and distance setting only.

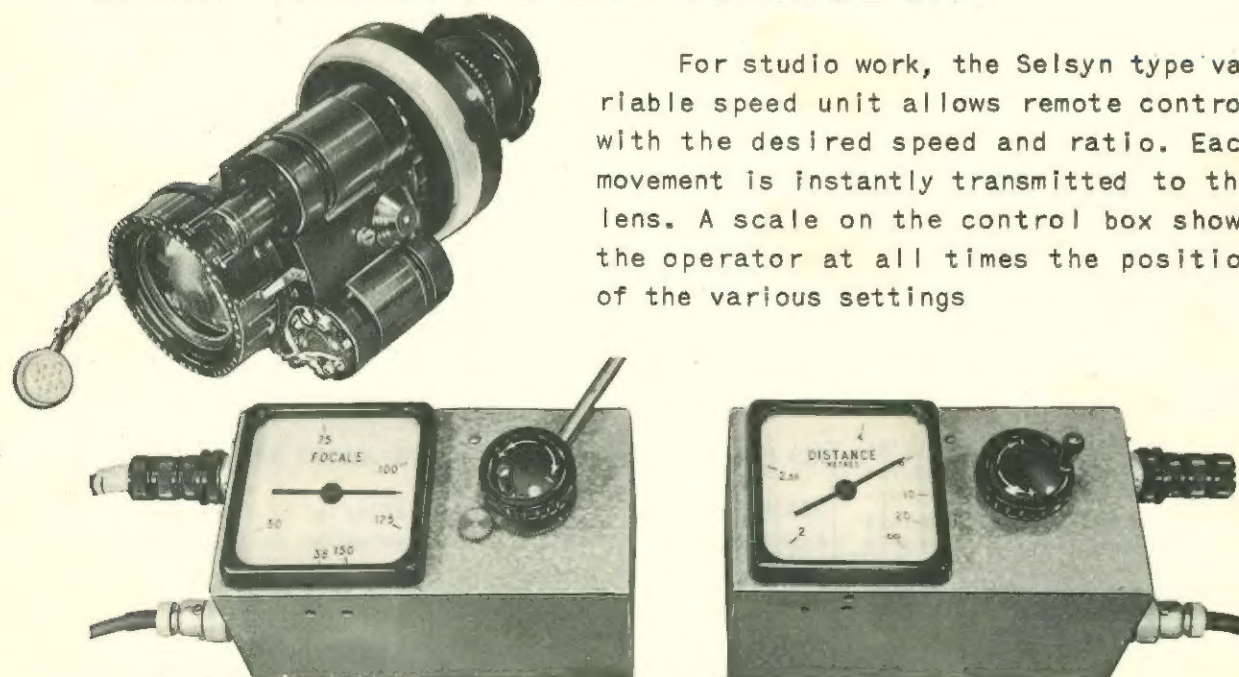
REMOTE CONTROLLED PAN-CINORS

The PAN CINOR lenses can be delivered ready for remote control. The distance and diaphragm rings are geared (modul 0.5, pitch diameter 92mm, 184 teeth). The focal lengths are controlled by an endless screw and a gear (modul 0.5, pitch diameter 12mm, 24 teeth). The drawing beside gives the main dimensions.



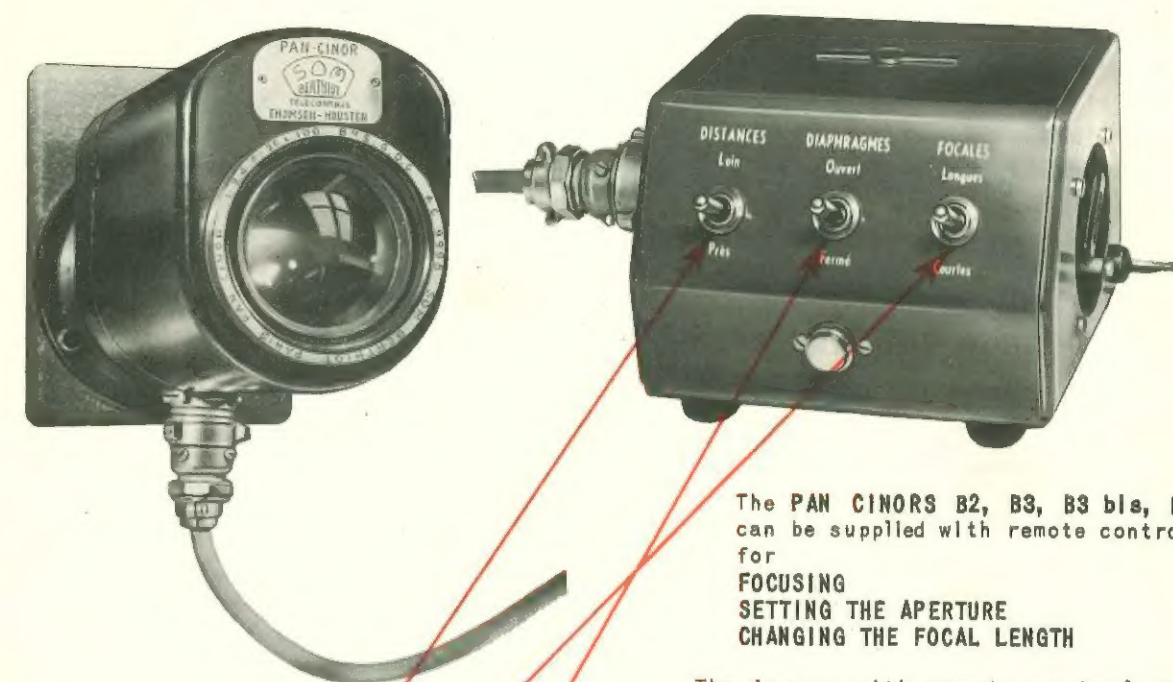
"SELSYN" VARIABLE SPEED CONTROL UNIT

For studio work, the Selsyn type variable speed unit allows remote control with the desired speed and ratio. Each movement is instantly transmitted to the lens. A scale on the control box shows the operator at all times the position of the various settings



Variable speed mechanism DEBRIE on SOM BERTHIOT PAN CINOR B3. Focal length and distance are remote controlled. Diaphragm is controlled manually.

REMOTE CONTROLLED PAN-CINORS



The PAN CINORS B2, B3, B3 bis, B4 can be supplied with remote control for
FOCUSING
SETTING THE APERTURE
CHANGING THE FOCAL LENGTH

The lenses with remote control are especially equipped with:

- 1) a geardrive for the focusing
- 2) a geardrive for the diaphragm
- 3) a unit with a geardrive for the focal length. This unit is mounted on a cradle support connected with the lens and which supports the electric motors.

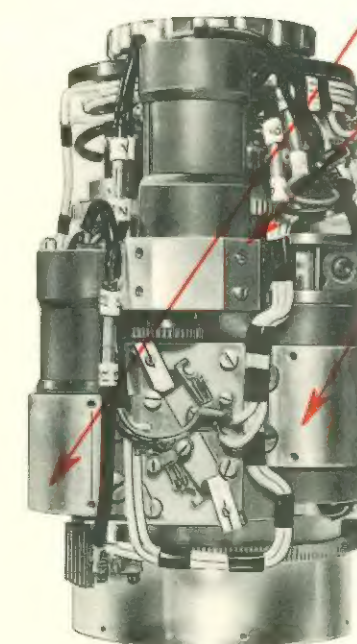
The electric motors run on an AC 50/60 cycle current of 127 V and are equipped with a 1/100 reduction unit. A motor with the reduction unit together forms a cylindrical unit 33 mm in diameter. Each motor unit is installed in its own bed and the control axle is engaged simply by rotating the motor unit itself. Each of the three controls has an electrical cut off at the end of its course.

Lenses so equipped are mounted on a support on which the electrical units are covered with a protection cover, and are therefore not subject to dust.

The units have an electrical socket with 13 prongs. An electrical cable connects the lens with the control box. (standard length is 80 feet).

THE CONTROL BOX is equipped with:
a transformer for primary Voltages of 110V, 115V, 120V, 127V and 220V, and secondary voltage of 127V permitting you to isolate the lens from the section.

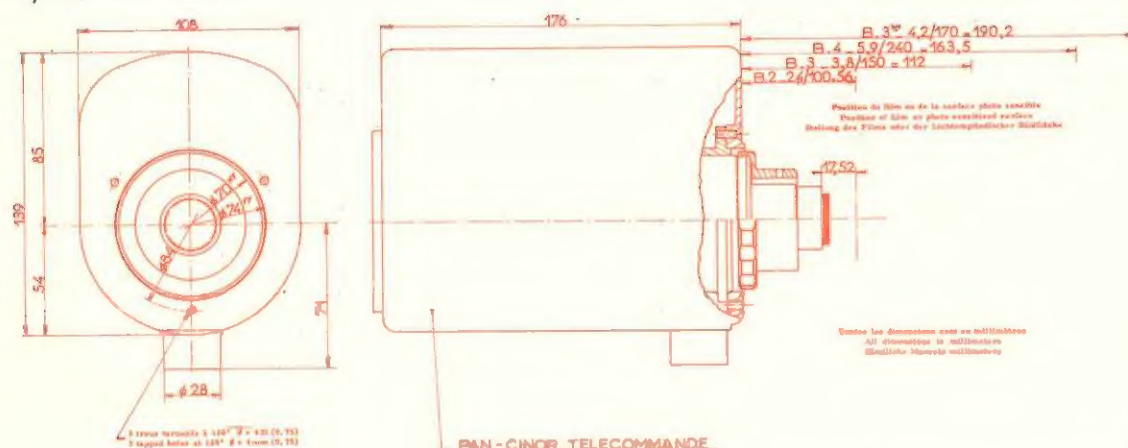
Three two pole inverters - three condensers - neon lamp.



Optical Characteristics

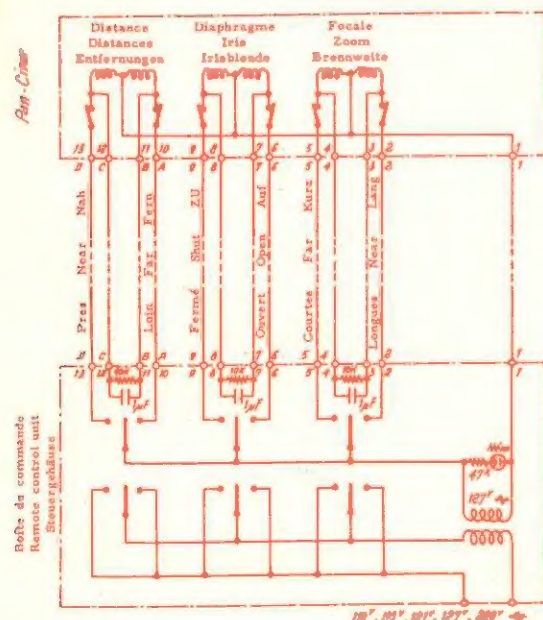
	B ₂	B ₃	B ₃ BIS	B ₄
Minimum Focal length	25	38,5	40	60
Maximum Focal length	100	154	170	240
Aperture (Constant, Maximum)	2,4	3,8	4,2	5,9
Range of Distances without close-up lens	$\infty \rightarrow 2\text{ m}$	$\infty \rightarrow 2\text{ m}$	$\infty \rightarrow 2\text{ m } 10$	$\infty \rightarrow 2\text{ m } 17$
Range of Distances with 2m close-up lens	2m \rightarrow 1m10	2m \rightarrow 1m13	2m10 \rightarrow 1m13	2m07 \rightarrow 1m 20
Range of Distances with 1m close-up lens	1m10 \rightarrow 0m80	1m13 \rightarrow 0m84	1m13 \rightarrow 0m85	1m20 \rightarrow 0m 95

Physical Characteristics



Net weight of B-2 lens with 3 remote controls 7¼ lbs., with two controls only 6¼ lbs.

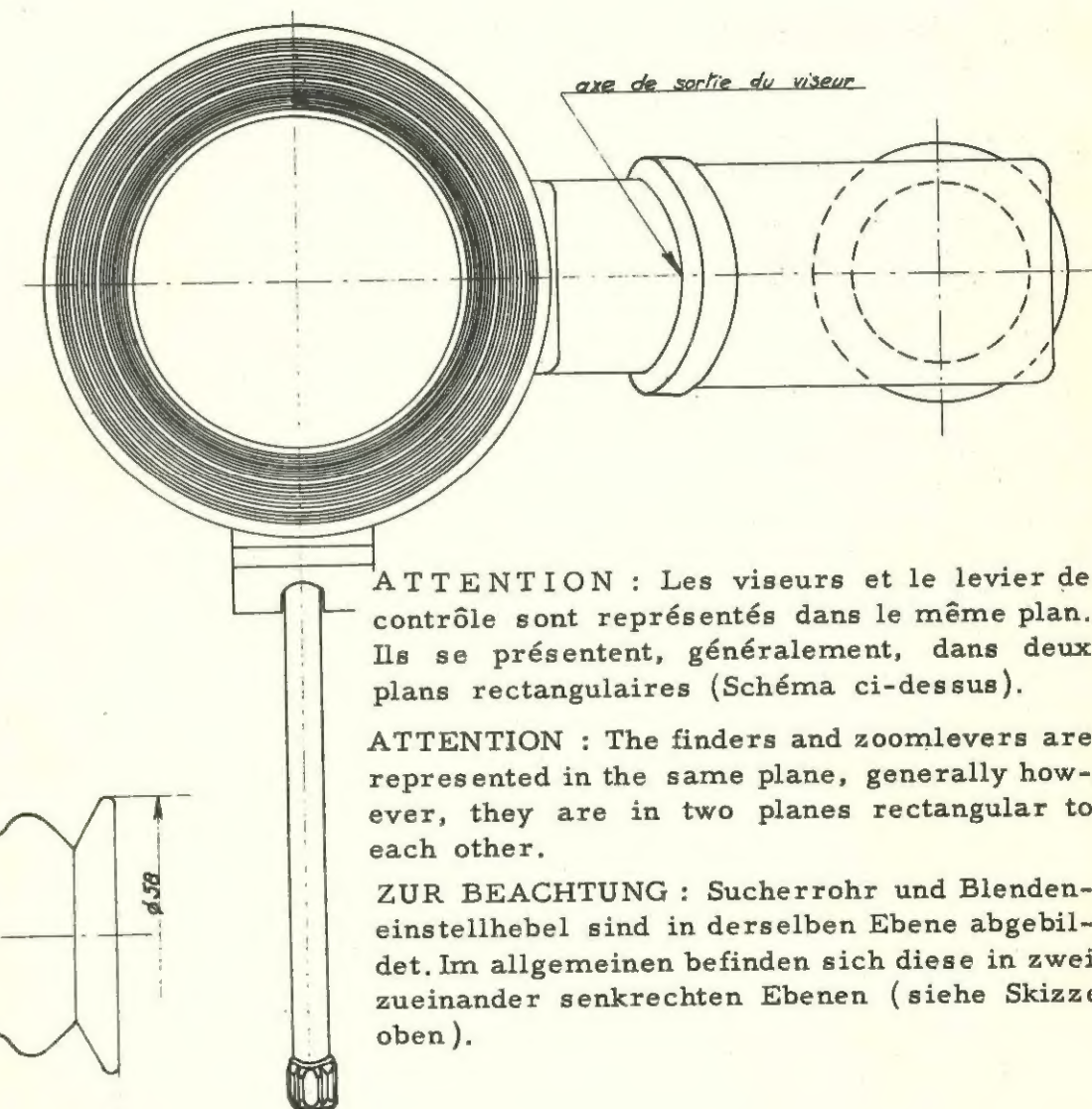
Electric circuit



Electro Mechanical Characteristics

Usable currents 110, 115, 120, 127, 220 V.	Max. Time 50 ~	Min. Time 60 ~
FOCUSING: motor unit with pinion gear of 24 teeth	13 sec.	11 sec.
DIAPHRAGM: motor unit with pinion gear of 11 teeth	7 sec.	6 sec.
FOCAL LENGTH: motor unit with pinion gear of 20 teeth	14 sec.	12 sec.
motor unit with pinion gear of 40 teeth	7 sec.	6 sec.

These times can be different according to the choice of the user. It only requires you to equip each motor unit with the correct pinion.

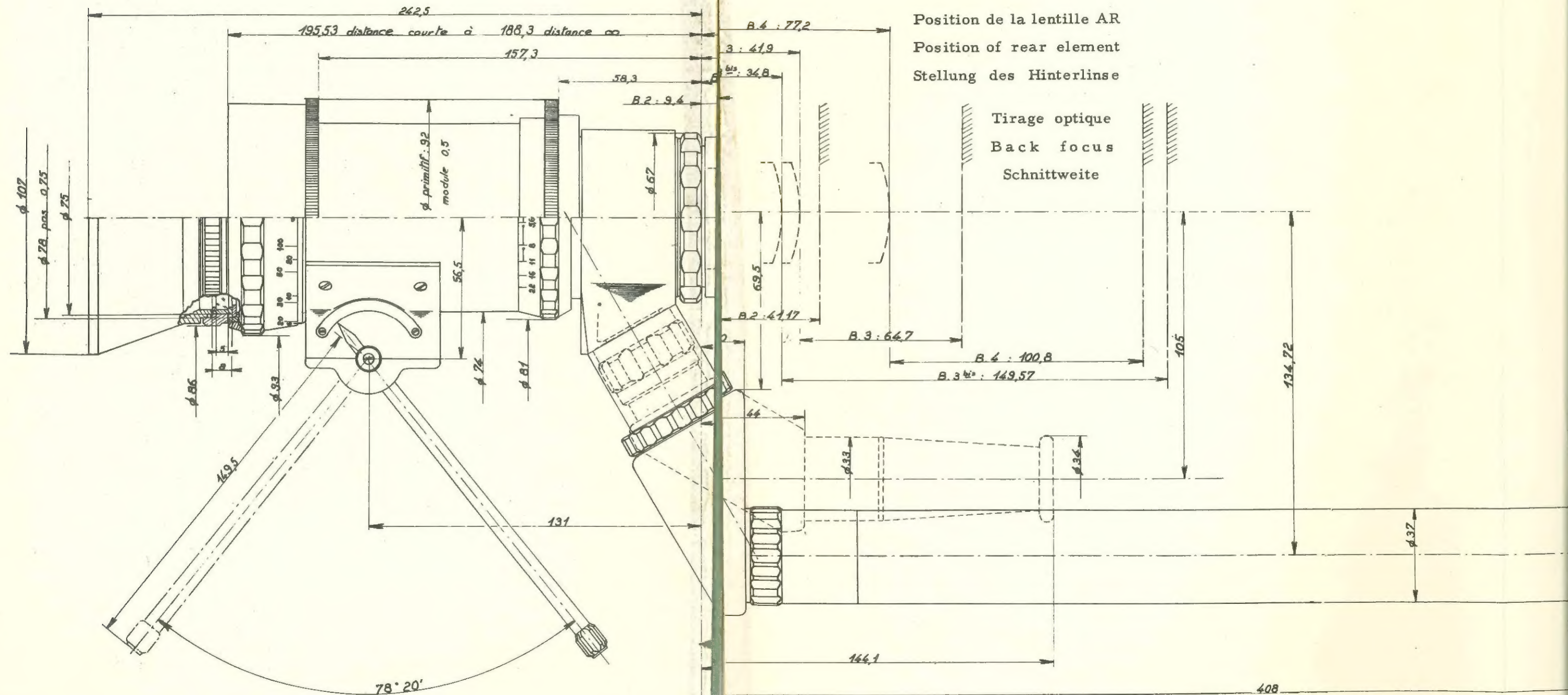


ATTENTION : Les viseurs et le levier de contrôle sont représentés dans le même plan. Ils se présentent, généralement, dans deux plans rectangulaires (Schéma ci-dessus).

ATTENTION : The finders and zoomlevers are represented in the same plane, generally however, they are in two planes rectangular to each other.

ZUR BEACHTUNG : Sucherrohr und Blenden-einstellhebel sind in derselben Ebene abgebildet. Im allgemeinen befinden sich diese in zwei zueinander senkrechten Ebenen (siehe Skizze oben).

SILHOUETTE et DIMENSIONS des PAN-CINOR B2, B3, B3 bis et B4
 PROFILE and SIZES of PAN-CINOR B2, B3, B3 bis and B4
 SKIZZE und MASSE der PAN-CINOR B2, B3, B3 bis und B4



Viseurs : 10 cm - 13 cm et 39 cm. Dimensions et Positions
 10 cm, 13 cm and 39 cm View finders - Dimensions and Positions
 Mass und Stellung der Sucher mit 10 cm, 13 cm und 39 cm Sucherrohr



